

Green Coffee cherry juice in cosmetics

→ no dried cherry

→ no 'Subtype - low - green'

→ no mycotoxins level

DERMOCOSMETIC PRODUCTS BASED ON EXTRACTS OF THE COFFEE TREE

[Produits dermo-cosmétiques à base d'extraits de caféier]

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Dry (preservation of polyphenols)

Subtype

low-mycotoxins (referring to the fact)

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[Patent of invention for which the granting has been postponed in execution of Art. 11 § 7 of the law of July 5, 1844 modified by the law of April 7, 1902.]

The present invention relates to the new application in dermocosmetology of certain plant substances extracted from the flowers and green fruit of the coffee tree. Solid and liquid extracts obtained specifically from these tropical bushes present beneficial properties for the skin, hair and scalp.

Thus, the following can be made: beauty creams, shampoos, milks, lotions for hair maintenance, rinsing liquids, dyes, lotions and setting liquids, lipsticks, gels, anti-wrinkle masks, shaving creams, lotions for calming razor burns (products called "after-shave"), soaps, sunscreen creams, creams for home tanning, deodorizing products, toilet waters, toothpastes and lastly any other product relating to hair cosmetics and aesthetics in general that, apart from current vehicles for such products, are applicable on the skin or hair and contain a suspension or liquid or solid extract obtained from the flowers and green fruit of the coffee tree. The presence of this suspension or solid extract or liquid confers on these products the remarkable property of protecting the epidermis and the dermis by their specific, deep-acting natural elements, stimulating the skin tissue and preserving its natural pH.

The coffee tree is a plant originating from Abyssinia, belonging to the Rubiaceae family and which gives coffee. It is represented by about twenty species, the main one of which is the Arabian coffee tree (*Coffea arabica*). It is a bush about 7 to 10 meters high with opposite leaves and white flowers with a pleasant odor. The flowers are hermaphroditic and regular with a concave receptacle. The ovary, housed in the cavity of the receptacle, becomes the fruit of the coffee tree at maturity, a drupe with a pericarp that has a pulpy part and above a thick nucleus circumscribing two locules; each of these locules contains a seed. These seeds, which contain the coffee, are provided with horny endosperm at the base of which the embryo is located.

To fabricate beauty or health care products containing extracts of the coffee tree obtained specifically for this purpose, selected bushes are used to avoid the use of plants attacked by parasites or by ants. Preferably, young plants are used -- the bushes are already producing at two to three years old -- and harvesting is done in July or August, according to the zone.

The coffee tree flowers two to three times; white flowers and especially the fruit are used, which are harvested before they are completely mature, when they are still green. The plant material harvested is washed several times in cold water and introduced afterward into double cylinder extractors or electric grinders. The liquid expressed is collected in glass, porcelain or even plastic containers. The "coffee juice" so obtained is presented in the form of a creamy mass with pleasant odor and taste and the color of which varies according to the type of coffee tree used, from light yellow to blue-grey. The plant extract is purified and stabilized by using preservative substances known in biological chemistry for this type of operation, and then kept in closed sterile containers made of glass or plastic material. A fine and stable powder is obtained by lyophilization that in aqueous solution keeps all the beneficial properties for the skin and hair from the "fresh coffee juice".

According to the table published in *The Chemistry of Foods*, the chemical analysis of extracts of the coffee tree, flowers and green fruit shows the presence of sweet materials (9.55%), caffeine (1.08%), alcoholic extracts containing nitrogenous materials, coloring substances, cellulose, dextrin, water, etc. But according to observations carried out by the author of this patent application, it is the presence of certain legumins and albumins (9.87%) and caffeic and cafetaninic acids (8.40%) that would explain the interesting properties of coffee extracts for dermocosmetology.

The presence of these characteristic natural substances enables nitrate conservation when an area poor in lipids and carbohydrates (dry skin, greasy skin) leads tissues to catabolize their proteins. The skin tissue invaded by protein substances coming from the base substance by free diffusion uses some of

them for metabolic purposes; on the other hand, the others play a more plastic than dynamic role and it is really the plastic element of the skin and hair, the elastic substance which is the keratin dissolved by alkaline media and which is protected by cosmetic products containing caffeic acids and cafetannic acids (caffeic acid:  $C_9H_6O_5$  and cafetannic acid:  $C_{30}H_{18}O_{16}$ ). Cafetannic acid is a specific glucoside contained in coffee that presents the reactions of a tannin. It gives a natural astringent characteristic to these extracts or suspensions of the coffee tree without being toxic or irritating for the skin.

When applied to the skin, hair or on the scalp, these health care products are characterized by the following biochemical properties:

1. *Acidifying power*, therefore keratinization power, protecting skin and hair from external effects;
2. *Astringent power*; due to the presence of tannin group acids;
3. *Stimulant power*: vasomotor, counterirritant, conditioning action on skin tissue.

To produce dermocosmetic products on the industrial scale that contain extracts or suspensions of the coffee tree {flowers and green fruits}, this raw plant material is introduced into the respective products in the following way: the component parts of the formula and the respective vehicle with the liquid or solid extract of coffee are mixed in variable proportions according to the desired concentration, from 0.05 to 25%, or even better, and a preservative substance. Then everything is again passed through grinding or into a mixer until the time when the dispersion is sufficiently fine to obtain a smooth layer on the skin or hair.

In conclusion, the characteristic points of this invention are:

- I. For the first time in dermocosmetology, the use of certain beneficial properties for the skin, hair and scalp from extracts or suspensions especially obtained from flowers or green fruit of the coffee tree.

II. The remarkable effects of these properties are expressed by stimulation and stabilization actions on the skin chemical processes. The skin is rehydrated and firmed up due to a specific astringent action of the caffeic acids and especially cafetannic acids (tannin group).

By way of nonlimiting examples of the scope of this invention, several examples of formulas encompassing, apart from current vehicles, a liquid or solid suspension or extract especially obtained from flowers and green fruit of the coffee tree for applications in dermocosmetology.

Example No. 1 -- Hair lotion (stimulant)

	g
Pulverized pilocarpin hydrochloride	0.75
Medicinal liquid ammonia	15
Distilled water	150
Ethyl oxide	75
2% lavender spirit	75
Extract of coffee flowers or green fruit	725

Example No. 2 -- Lotion for the face

	g
1/100 <sup>th</sup> potassium eosinate	2
Coffee tree extract	85
Neutral glycerin at 30 °	20
Distilled rose water	320
Distilled orange virginica water	60

Hamamelis water	q.s. for 1L
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Example No. 3 – Beauty cream

	g
Stearic acid	15
Paraffin oil	35
Coffee tree extract	18
Triethanolamine	5
Rhodiol	0.3
Nerol	0.1
Ethyl alcohol	0.1
Citronellol	0.3
Fragrance	q.s.
Water	45

Example No. 4 – Bleaching solution for the hair

	g
Acid violet 6B or Paris violet or Hoffmann violet	1
Extract of coffee flowers	q.s. for 100

Example No. 5 – Shaving cream

Extract of green coffee beans	50
Menthol	0.1

Zinc sulfocarbonate	0.9
Camphor	0.15
Hamamelis water	60

Example No. 6 – After-shave lotion

	g
Ethyl alcohol	40
Sorbitol	2.5
Menthol	0.1
Boric acid	2
Distilled water	35
Coffee extract, green mocha	20
Fragrance	q.s.

Example No. 7 – Toothpaste

	g
Dicalcium phosphate	60
Glycerin	17.50
Water	20
Green coffee extract	3.50
Gum tragacanth	1.20
Fragrance	1

Of course, the invention is in no way limited to the embodiments or to the examples which have been given here purely for information only.

#### Summary

The principle of this invention resides in the use of extracts or suspension in dermocosmetology and perfumery for the first time that are obtained specifically from flowers and green fruit of the coffee tree. The remarkable effects of these new applications are expressed by the stabilization actions of skin chemical processes and special protection of keratin of the hair. The skin is firmed up thanks to a specific astringent action due to caffeic and cafetannic acids.